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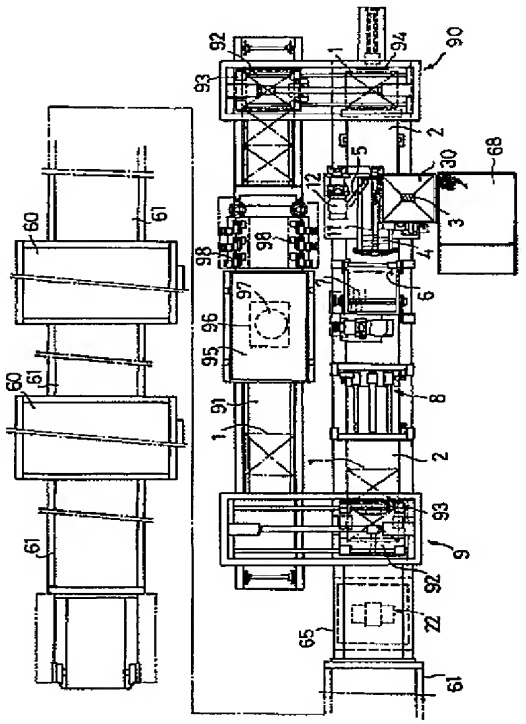
(54)【発明の名称】　油脂性菓子食品の製造装置

(57)【要約】

【目的】　溶けた油脂性材料と種々な食品粒との混ぜ合わせて成形した菓子食品を均質状態で手造り風の外観仕上で能率よく生産する。

【構成】　モールド板上１に造形菓子材料を供給する供給機構をパフなどの食品粒供給機３と、該食品粒供給機３に連設され、食品粒に溶けたチョコレートなどの油脂性材料を混合するミキサー４と、溶けた油脂性材料の注入器５とから構成し、さらに該供給機構から供給される造形菓子材料を均し機構６を備えた摺込み充填機構７と、走行される前記モールド板上に載置された造形菓子材料の余剰分をモールド板１から排除する水平往復動自在のスクレーパ機構８を配備すると共に、搬送機構２上に載置搬送されてくるモールド板１を造形菓子より外し回収するプレート回収機構９と、該モールド板１を外した造形菓子に搬送機構１上で振動を与えて成形するタッピング機構２２を備えたことで、食品粒の形状に関係なく、種々な食品粒入り油脂性菓子食品とすることが手造り風の外観に容易にできる。



1

【特許請求の範囲】

【請求項１】　油脂性菓子食品の造形用のモールド板を載置搬送して連続または間歇的に走行する搬送機構と、該モールド板上に造形菓子材料を供給する供給機構を食品粒供給機と、該食品粒供給機に連設され、食品粒に溶けた油脂性材料を混合するミキサーと、溶けた油脂性材料の注入器とから構成し、さらに該供給機構から供給される造形菓子材料をモールド板上で均す摺込み充填機構と、走行される前記モールド板上に載置された造形菓子材料の余剰分をモールド板から排除する水平往復動自在のスクレーパ機構を配備すると共に、搬送機構上に載置搬送されてくるモールド板を造形菓子より外し回収するプレート回収機構と、該モールド板を外した造形菓子に搬送機構上で振動を与えて成形するタップピング機構を備えたことを特徴とする油脂性菓子食品の製造装置。

【請求項２】　食品粒に溶けた油脂性材料が混合された造形菓子材料を充填できる貫通孔を複数配列して備えたモールド板であって、該貫通孔は上端縁に向かって漸次小径となる傾斜面或いは曲面のテーパー面を持っている逆円錐貫通孔と鉛直貫通孔とからなる油脂性菓子食品の製造装置。

【請求項３】　前記モールド板が鉛直貫通孔を設けた下板と、該鉛直貫通孔より小径の逆円錐貫通孔を設けた上板とからなり、各貫通孔を同心上に配列した請求項１または２記載の油脂性菓子食品の製造装置。

【請求項４】　前記モールド板の搬送機構上にプレート供給機構を配備し、前記プレート回収機構から回収されるモールド板のリターン搬送路に連結した請求項１，２または３記載の油脂性菓子食品の製造装置。

【請求項５】　前記プレート供給回収機構が、前記モールド板を挟持するグリップ部を昇降自在に設け、該グリップ部を往復摺動する走行用スライダに配備したものであって、前記モールド板搬送路とモールド板リターン搬送路とに連絡配備されている請求項４記載の油脂性菓子食品の製造装置。

【請求項６】　前記モールド板のリターン搬送路が、搬送コンベアからなり、該搬送コンベアを搬入するトンネルドームと、該トンネルドームに内装されるヒータと送風機とからなるモールド板加熱機構を備えた請求項４または５記載の油脂性菓子食品の製造装置。

【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明は、膨化穀類、その他ビスケット、クラッカーや乾燥果肉糖類等の食品粒を組入れたチョコレート食品を製造するための油脂性菓子食品の製造装置に関するものである。

【０００２】

【従来の技術】従来、チョコレート等の油脂性菓子材料に種々な食品粒を付着或いは混入して、食品粒の風味及び食感を同時に味合わせる油脂性菓子食品いわゆるクランチチョコが知られ、この種のクランチチョコ食品の製造には未固化の油脂性菓子の表面に多数の食品粒を振動フィーダやベルトコンベア等を活用して、連続的に落下させ、付着した後、冷却して固化したり、食品粒を中心に入れたトレーに油脂性菓子材料を充填して、固化する装置が多用されている。

2

【０００３】

【発明が解決しようとする課題】この従来の製造装置では、食品粒の混合や付着が均等化しにくく、ばらつきが大きく加工工程も複雑かつ低能率のものとなって、しかも食品粒の添加物を連続的に過不足なく切出すことが困難で外観不良となったり、モールドでは規定ブロック状となり自然状態の手造り風の仕上ができず満足できないし、かつ製品の不良品が多発するほか、食品片の形状に対応して食品粒を付着させる工程が複雑かつ低能率となって、生産性が悪く、製造コスト高となるなどの問題があった。本発明は、これら従来の欠点を排除しようとするもので、油脂性菓子とするのに食品粒形状に関係なく食品粒入り油脂性菓子とすることができ、製品の外観も手造り風で著しく良好で均等化でき、商品価値を高められるし、生産性をも大巾に向上できる油脂性菓子食品の製造装置を提供することを目的としたものである。

【０００４】

【課題を解決するための手段】本発明は、油脂性菓子食品の造形用のモールド板を載置搬送して連続または間歇的に走行する搬送機構と、該モールド板上に造形菓子材料を供給する供給機構を食品粒供給機と、該食品粒供給機に連設され、食品粒に溶けた油脂性材料を混合するミキサーと、溶けた油脂性材料の注入器とから構成し、さらに該供給機構から供給される造形菓子材料をモールド板上で均す摺込み充填機構と、走行される前記モールド板上に載置された造形菓子材料の余剰分をモールド板から排除する水平往復動自在のスクレーパ機構を配備すると共に、搬送機構上に載置搬送されてくるモールド板を造形菓子より外し回収するプレート回収機構と、該モールド板を外した造形菓子に搬送機構上で振動を与えて成形するタップピング機構を備えたものである。

【０００５】

【作用】搬送機構でモールド板をプレート供給機構で搬入して造形菓子材料の供給機構の直下に搬送するが、食品粒供給機構には食品粒供給機と油脂性材料注入器とから食品粒と、溶けた油脂性材料とを投入し、ミキサーで混合攪拌して造形菓子材料とすると共に、モールド板上に載置供給する。次で造形菓子材料を載置したモーリド板を走行し、保持しつつモールド板上に往復動する均し機構で造形菓子材料を拡げ均しつつ、摺込み充填機構でモールド部へ摺込む。そして、このモールド板は搬送機構でさらに、移送されて水平往復動するスクレーパの下に位置させて、モールド板上に載置された造形菓子材料上面をスクレーパで掻き取り、その余剰分を排除して仕

上げたのち、モールド板をプレート回収機構で搬出し、油脂性菓子食品を搬送機構上に多数成形して移送し、さらに、タップピング機構で固化前の柔らかいうちに油脂性菓子食品に振動を与えて、外観形状をならして自然状態、特に手造り風に仕上げて効率よく品質良好な形態で製造することができる。

【０００６】

【実施例】本発明の実施例を図面を参照して説明すると、図１乃至図４に示すように油脂性菓子の造形用のモールド板１を載置搬送して連続または間歇的に走行するコンベアの搬送機構２と、該モールド板１上に造形菓子材料を供給する供給機構をパフなどの食品粒供給機３と、該食品粒供給機３に連設され、食品粒に溶けたチョコレートなどの油脂性材料を混合するミキサー４と、溶けた油脂性材料の注入器５とから構成し、さらに該供給機構から供給される造形菓子材料を均し機構６を備えた摺込み充填機構７と、走行される前記モールド板上に載置された造形菓子材料の余剰分をモールド板１から排除する水平往復動自在のスクレーパ機構８を配備すると共に、搬送機構２上に載置搬送されてくるモールド板１を造形菓子より外し回収するプレート回収機構９と、該モールド板１を外した造形菓子に搬送機構１上で振動を与えて成形するタッピング機構２２を備えて油脂性菓子食品の製造装置を構成してある。

【０００７】前記モールド板１としては、造形菓子材料挿入用の貫通孔２３を多数配列したものであって、該貫通孔２３は上端縁に向かって漸次小径となる傾斜面或いは曲面のテーパー面２４を持っているが、カップトレイ２５を嵌入すると大きさと深さを有している、例えば直径３０～３５φ，深さ１５mmの鉛直貫通孔２６を設けた下板２９と、該鉛直貫通孔２６より小径、例えば直径２４～２６φ，深さ５mmの逆円錐貫通孔２７を設けた上板２８とからなり、各貫通孔２６，２７を同心上に配列して貫通孔２３としてある。

【０００８】この場合、前記逆円錐貫通孔２７は、球状の曲面を持った貫通孔にしてもよくカップトレイ２５より盛り上がった材料を山盛形状となるように配慮してある。また、前記上板２８と下板２９とは１：３の厚み寸法で分離可能或いは開閉自在の連結構成としたり、一体構造のモールド板１とすることもできる。さらに、カップトレイ２５は下敷きシートを用いるときは貫通孔２６に嵌入するが、カップトレイ２５を用いないときには搬送用のコンベアベルト上に貫通孔２６で直接モールドすればよく、該貫通孔２６を鉛直貫通孔に限らず錐状或いは他の形状の貫通孔を設けた下板２９を用いることができる。さらに、前記カップトレイ２５を用いるときは、上板２８を下板２９から外し、カップトレイ２５を下板２９の鉛直貫通孔２６に嵌入してセットしたのち、上板２８を重合固着してからプレート供給機構９０に搬入するか、或いは下板２９の底面側から鉛直貫通孔２６にカップトレイ２５を嵌入してセットして裏返してプレート供給機構９０に搬入するのがよい。

【０００９】前記食品粒供給機３としては、図５乃至図８のようにパフライス、コンフレーク、などのα化穀類、ナッツ類、バタースカッチなどの糖菓子や乾燥果肉などの食品粒を投入しうるホッパー３０を備えたスクリュウハウジング３１と、該ハウジング３１内に回動自在に設けたスクリュウ３２とからなり、モータ３４で駆動され、ハウジング３１に形成した排出口３３を前記ミキサー４に連通配備してある。

【００１０】このミキサー４は、図９のようにオープンケーシング１０内にシャフト１１を変速モータ１２で回転自在に備え、該シャフト１１に攪拌翼１３を複数突設し、油脂菓子材料を攪拌しつつ、一端側に移送して導出口１４から繰り出し、搬送されてくるモールド板１上に、盛り込み供給することができるように構成されているが、該導出口１４に開閉調整可能のシャッタを備えてもよく、またジャケット式チョコレートタンク１５に連絡されたチョコレートポンプ１６より配管で注入器５が一端に開口臨ましめられ、その近傍に開口する前記食品粒供給機３のスクリュウハウジング３１が配備されている。

【００１１】さらに、前記摺込み充填機構７は、図１０乃至図１２のように、前記モールド板１の走行方向に直交して往復動する均し板のある均し機構４と、モールド板１の周囲を略コ字上に囲成され内部に冷却水が流過するジャケット壁７０と、該ジャケット壁７０に回転自在に設けた攪拌翼片７１を備えた摺込シャット７２を変速モータ７３に連絡して備え、走行する搬送機構２の上面に配備されている。このジャケット壁７０は、冷却水の入口７４と出口７５とがヒータ１８のある冷却水タンク１７にポンプ１９を介して配管循環連絡してあって、該冷却水タンク１７及びポンプ１９は前記チョコレートタンク１５にも循環系として連絡してある。

【００１２】また、ジャケット壁７０は、両サイドに囲いのある略U字形の枠壁とし、その直下にモールド板１が通過するように配備し、モールド板１の走行方向に対設された壁部にモータ７６で揺動する保持片７７をガイド杆７８に備えたスライダ７９に備えてあって、モールド板１の支持を両サイドにあるガイドカム片８０とで、適確化できるようにしてある。

【００１３】なお、前記均し機構４としては、均し板が水平往復自在にガイド４０に備えられ、スクリュウ軸４１の回転で駆動され、モールド板１上に走行できるようにしてあるが、このスクリュウ軸４１に代えて他の搬送駆動機構を用いることもできる。また、前記搬送機構２は、ネットコンベア或いはチェンコンベアなどを用い駆動輪２０を介して変速モータ２１に連絡して走行自在に配備し、モールド板１を各工程に搬送或いは停止できるようにしてある。

【００１４】さらに、前記スクレーパ機構８は、図１３乃至図１６例のようにモールド板１の走行方向にシリンダ８１で往復動するスライダ８２をガイド８３に摺動自在に設け、該スライダ８２にスクレーパ板８４を揺動可能に枢着し、かつスライダの反転位置に前記シリンダの駆動操作用の無接点制御スイッチ８５，８５を配備し、往復運動するように構成されている。この場合、スクレーパ板８４は、支軸８６で支持し、該支軸８６をレバー８７でシリンダ８８に連結し、該シリンダ８８の駆動でスクレーパ板８４の先端部をモールド板１の上面に押圧走行し、造形菓子材料の余剰分を掻き取り仕上げ面とし、復帰時にはスクレーパ板８４の先端分を持ち上げて次の処理に備えられる。なお、掻き取り余剰分はフレーム端分に備えられる差込式の受皿８９に回収され、かつコンベア上に付着した材料をもドクターナイフ５９で掻き取り受皿８９に回収するようにするのが便利である。

【００１５】さらに、図１及び図２に示すように、前記モールド板１の搬送機構２上にプレート供給機構９０を配備し、前記プレート回収機構９から回収されるモールド板１のリターン搬送路９１に連絡し、しかも前記プレート回収機構９とプレート供給機構９０とが、前記モールド板１を挟持するグリップ部９２を昇降自在に設け、該グリップ部９２を往復摺動する走行用スライダ９３に配備したものであって、前記モールド体搬送路２とモールド板リターン搬送路９１とに連絡配備され、プレート供給機構９０にプッシャ９４を付設してある。

【００１６】前記モールド板１のリターン搬送路９１は、搬送コンベアからなり、全自動の場合のみプレート供給機構９０とともに用いられ、該搬送コンベアを搬入するトンネルドーム９５と、該トンネルドーム５５に内装されるヒータ９６と送風機９７とからなるモールド板加熱機構を備え、モールド板１のクリーニングができるようにしてあるが、半自動の場合にはプレート供給機構とともに省略してもよい。

【００１７】即ち、リターン搬送路９１には、図１７及び図１８の如くコンベアで繰り出されてくるモールド板１を保持搬送する回転ロール９８群を持ち、該モールド板１を加温する加熱手段のあるトンネルドーム９５とを備えている。このトンネルドーム９５の加熱手段としては、ヒータ９６と、該ヒータ９６群に送風する送風機９７とからなり、通過するモールド板１上に温風を遊動するフード９９を備えていて、前記回転ロール９８群に受け渡されて移動してゆく際に、その通過を光電管などのセンサー５２で検出して、送風機９７を駆動し、ヒータ９６を通過させた温風をモールド板１に吹き付け、加温し、該トンネルドーム９５内での走行中は上下回転ロール９８群でモールド板１を挟持して保持搬送して、速度の速い繰り出しロール５１でプレート供給機構９０の下方へ送り出すように構成されている。そして、加温されたモールド板１を載置して連続または間歇的に走行するコンベアの搬送機構へ移動させ、該モールド板１上に造形菓子材料を供給する供給機構としてある。

【００１８】なお、モールド板１のリターン搬送路９１は、モールド板１をプレート回収機構９から受けて移動してゆき、トンネルドームに搬入される。この通過を光電管などのセンサーで検出して、送風機を駆動し、ヒータを通過させた温風をモールド板に吹き付けて加温する。該トンネルドーム内での走行中は回転ロール群でモールド板を挟持して保持搬送して速度の速い繰り出しロールで搬送機構へ送り出すのがよい。次いで、この搬送機構で加温されたモールド板を造形菓子材料の供給機構の直下に搬送するが、食品粒供給機構には食品粒供給機と油脂性材料注入器とから食品粒と、溶けた油脂性材料とを投入し、ミキサーで混合攪拌して造形菓子材料とすると共に、この造形菓子材料の調整ボックスに入れて軟質性や供給量を調整してモールド板上に供給することが、一連の作業でできるようにしてある。

【００１９】前記タップピング機構２２では、モータ付きバイブレータ機構を用いてコンベアに振動を与えるようにし、コンベア上の造形菓子の外観仕上を手造り風に変えるもので、クーリングコンベア６０を含む搬出コンベア６１へ造形菓子を移送できるようにしてある。図中６２，６３，６４は回収受皿、６５は基台、６６はキャスタ、６７は固定脚、６８は踏台である。

【００２０】

【発明の効果】本発明は、搬送される該モールド板上に造形菓子材料を供給する供給機構を食品粒供給機と、該食品粒供給機に連設され、食品粒に溶けた油脂性材料を混合するミキサーと、溶けた油脂性材料の注入器とから構成し、さらに該供給機構から供給される造形菓子材料をモールド板上で均す摺込み充填機構と、走行される前記モールド板上に載置された造形菓子材料の余剰分をモールド板から排除する水平往復動自在のスクレーパ機構を配備すると共に、搬送機構上に載置搬送されてくるモールド板を造形菓子より外し回収するプレート回収機構と、該モールド板を外した造形菓子に搬送機構上で振動を与えて成形するタップピング機構を備えたことにより、食品粒の形状に関係なく種々な食品粒入り油脂性菓子食品とすることが、外観仕上良好で手造り風に容易にでき、摺込み作業も適確であるほか、モールドも良好で成形性並びに混合比率も均等で品質向上に役立ち、味覚もしつこくなく、風味のある食感をたのしめる菓子食品として、能率よく生産性をも大巾に高められるものである。

【図面の簡単な説明】

【図１】本発明の実施例を示す全体平面図である。

【図２】図１の例の側面図である。

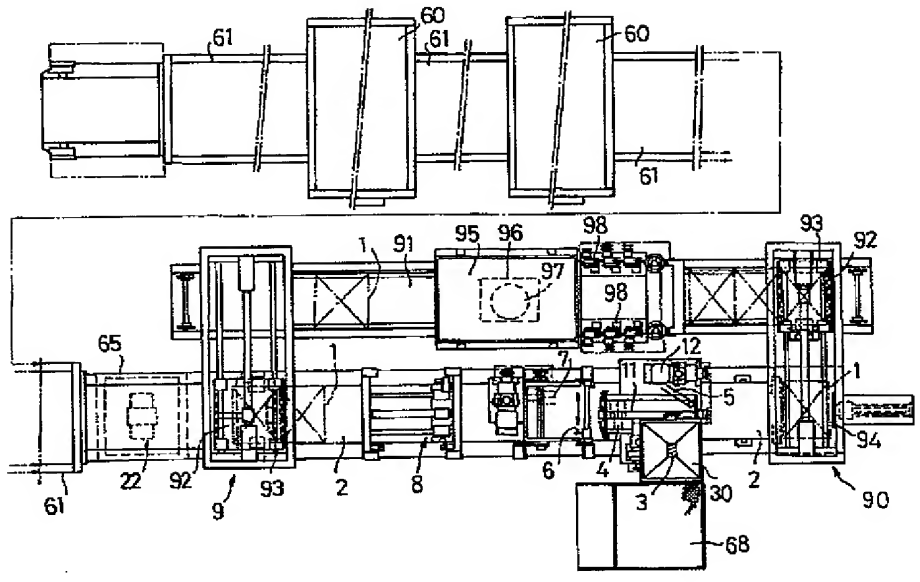
【図３】図１の例で用いられるモールド板の斜視図である。

【図４】図３のＡ－Ａ線における拡大縦断面図である。

【図５】図１の菓子食品の造形部の平面図である。
【図６】図５の例の側面図である。
【図７】図５の例の正面図である。
【図８】食品粒供給機構の側面図である。
【図９】オープンミキサーの切断平面図である。
【図１０】摺込み充填機構の一部切断平面図である。
【図１１】図８の例の一部切断側面図である。
【図１２】図８の例の正面図である。
【図１３】スクレーパ機構の平面図である。
【図１４】図１３のＢ－Ｂ線における縦断面図である。
【図１５】図１４のＣ－Ｃ線における正面図である。
【図１６】図１５のＤ－Ｄ線における一部の拡大縦断面図である。
【図１７】リターン搬送路の一部の拡大平面図である。
【図１８】図１７の例の側面図である。
【符号の説明】
1　モールド板
2　搬送機構
3　食品粒供給機
4　ミキサー
5　油脂材料注入器
6　均し機構
7　摺込み充填機構
8　スクレーパ機構
9　プレート回収機構
10　オープンケーシング
11　シャフト
12　モータ
＊13　攪拌翼
15　チョコレートタンク
16　チョコレートポンプ
17　冷却水タンク
18　ヒータ
19　ポンプ
20　駆動輪
21　モータ
22　タッピング機構
23　貫通孔
24　テーパー面
25　カップトレイ
26　鉛直貫通孔
27　逆円錐貫通孔
28　下板
29　上板
30　ホッパー
32　スクリュウ
70　ジャケット壁
71　攪拌翼
81　シリンダ
82　スライダ
90　プレート供給機構
91　リターン搬送路
95　トンネルドーム
96　ヒータ
97　送風機

＊

【図１】



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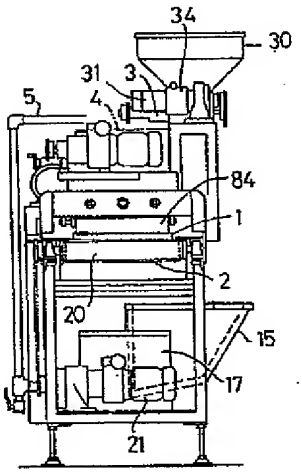

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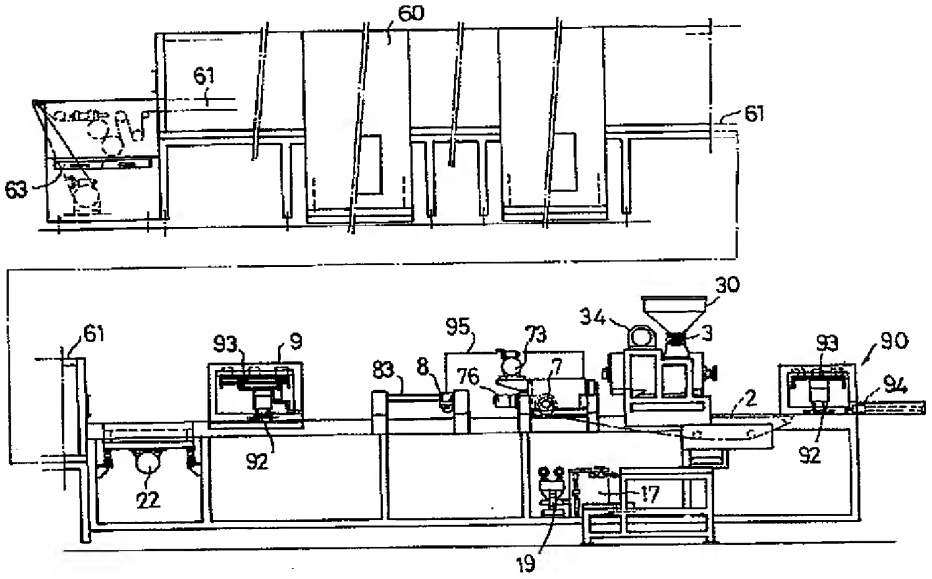
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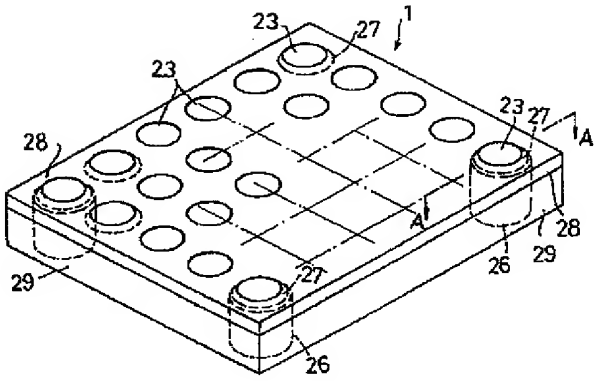
【図３】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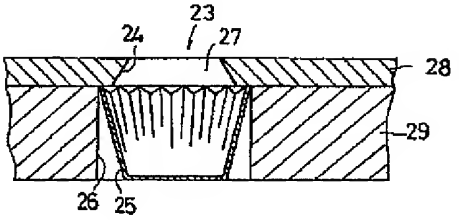
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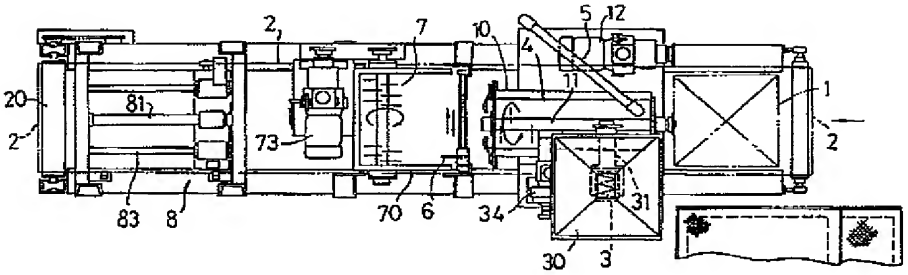
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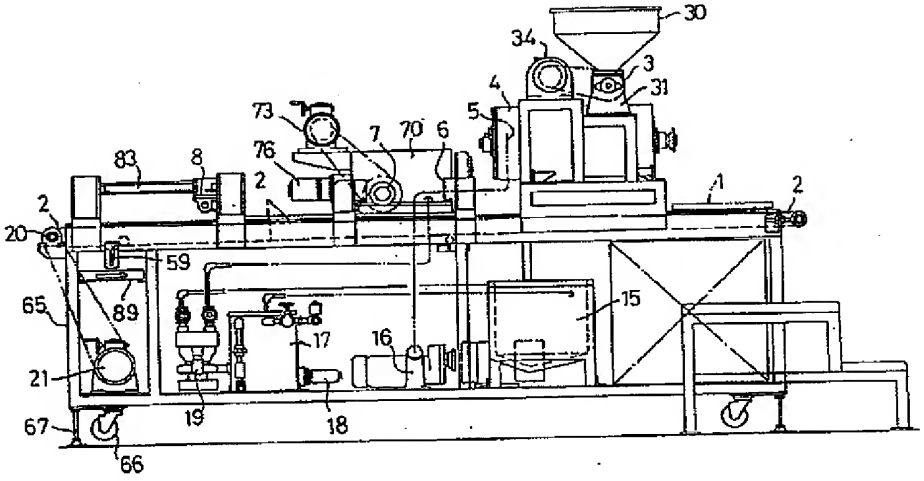
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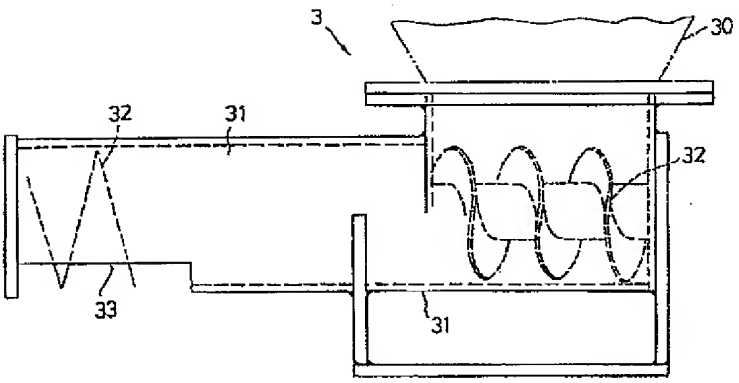
【図８】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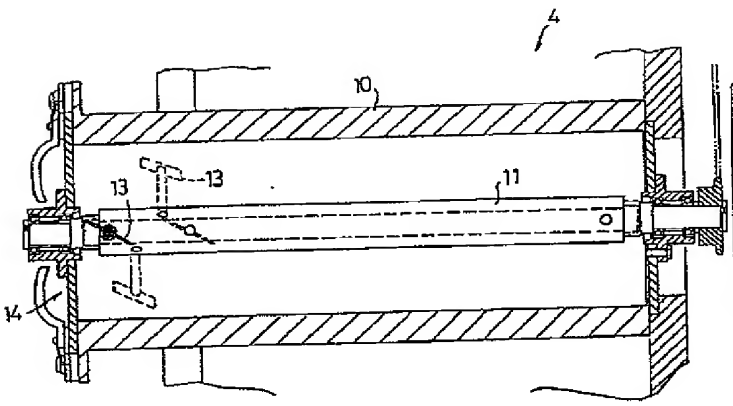
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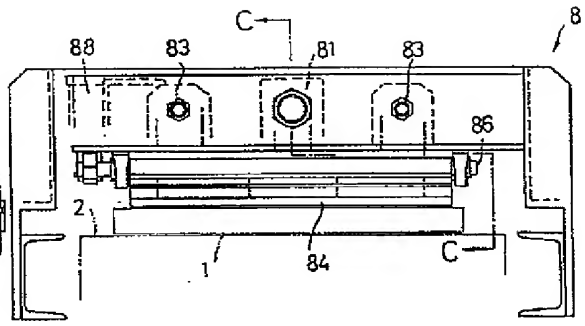
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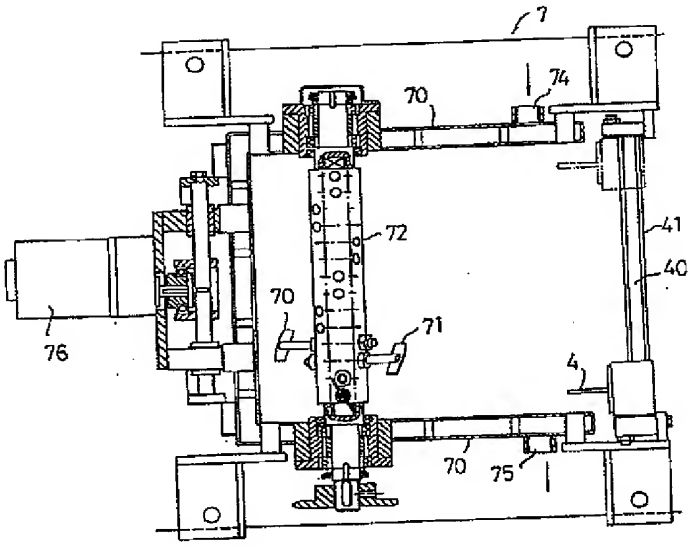
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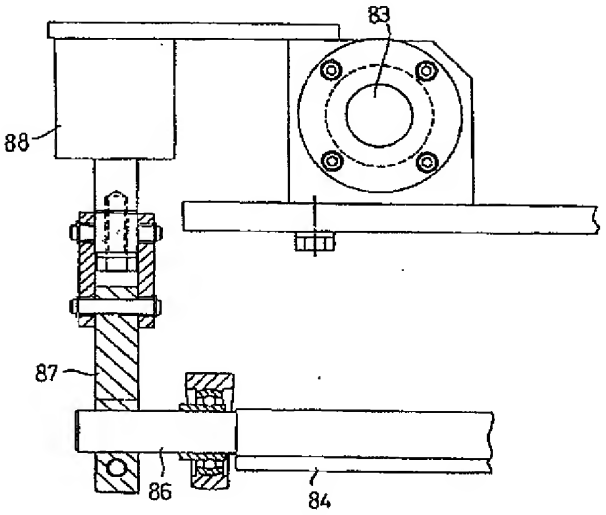
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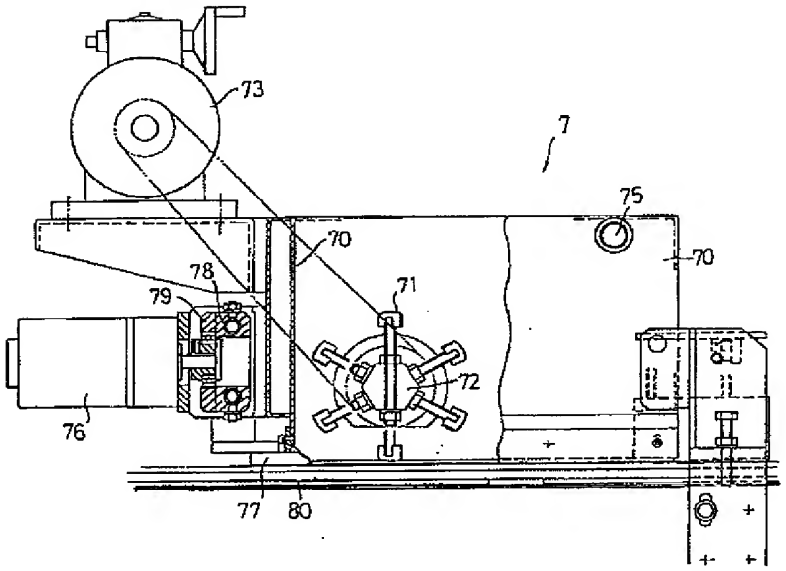
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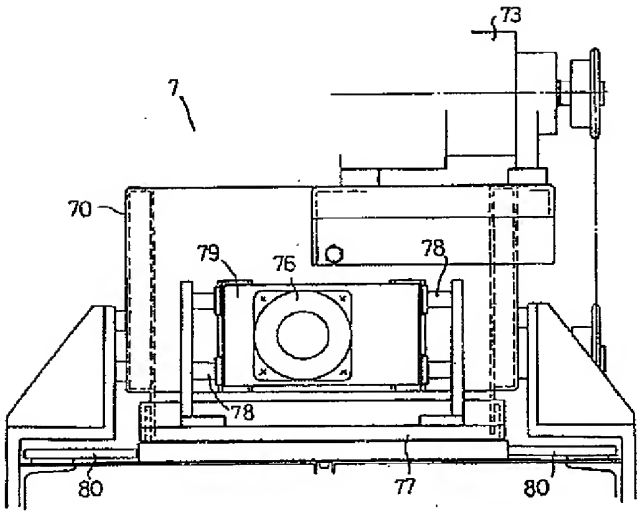
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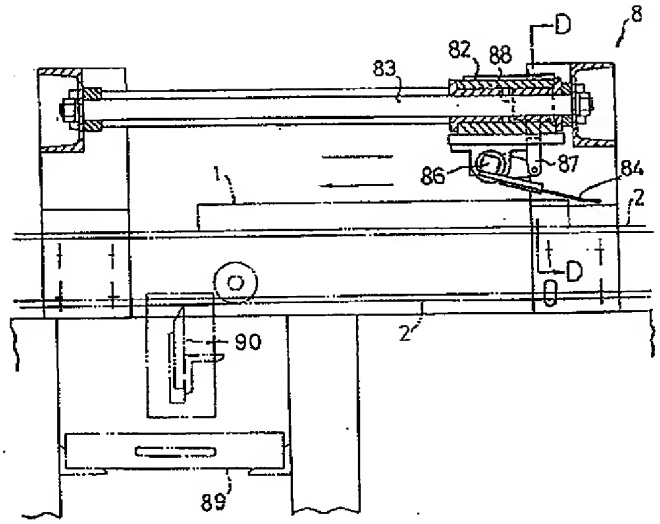
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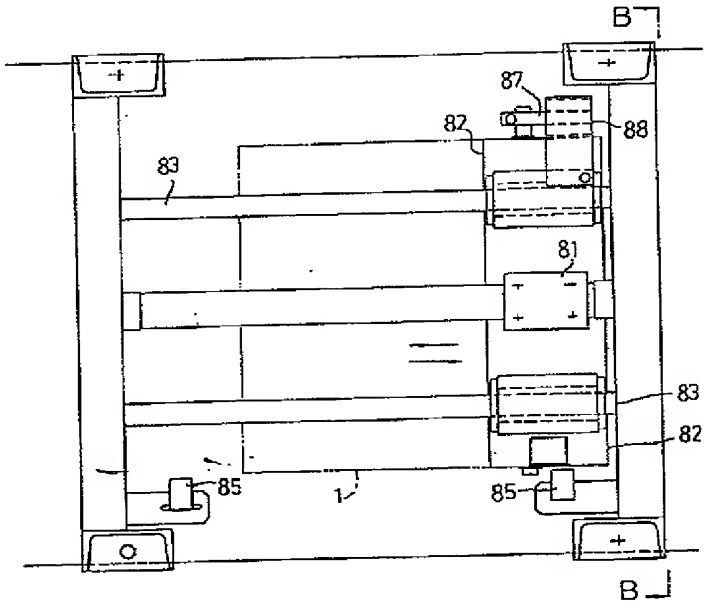
【図１３】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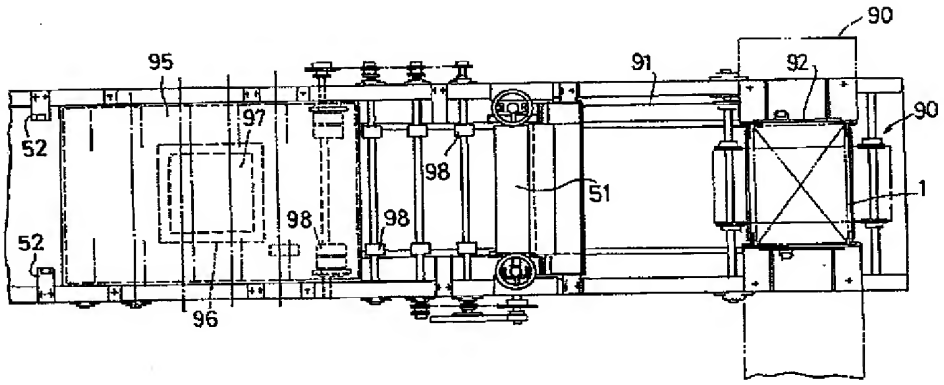
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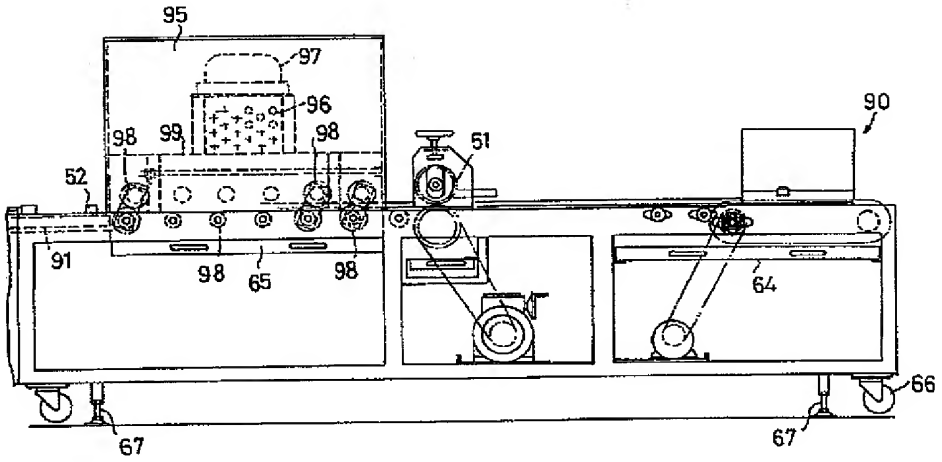
【図１８】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PATENT ABSTRACTS OF JAPAN

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A23G 7/00

(21)Application number : 05-115237
(22)Date of filing : 20.04.1993

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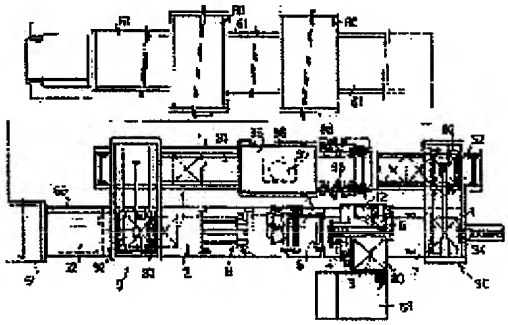
(72)Inventor : TANIZAWA TATSUYA

(54) DEVICE FOR PRODUCING FATTY OF OILY CONFECTIONARY FOOD

(57)Abstract:
PURPOSE: To efficiently produce a confectionary food having a handmade appearance in a homogeneous state by mixing a melted fatty or oily material with various food particles and subsequently molding the mixture.
CONSTITUTION: A device for producing a fatty or oily confectionary food is characterized by comprising a feeding mechanism for feeding a shaping confection material on a mold plate 1, a mixing, grinding and filling mechanism 7 equipped with a leveling mechanism 6 for leveling the shaping confection material fed from the feeding mechanism, a horizontally reciprocatively slidable scraper mechanism 8 for removing the excessive part of the shaping confection material loaded on the traveling mold plate, a plate-recovering mechanism 9 for demolding the molded confections from the mold plate 1 loaded and carried on a carrying mechanism 2 and subsequently recovering the released mold plate 1, and a tapping mechanism 22 for oscillating the molded confections on the carrying mechanism 1 to further shape the confections. The feeding mechanism for feeding the shaping confection material the mold plate 1 comprises a machine 3 for feeding food granules such as puffs, a mixer 4 connected to the food granule-feeding machine 3 and used for mixing the food granules with a fatty or material such as a melted chocolate, and an injector 5 for injecting the melted fatty material. The production device can easily form various food granule-containing fatty or oily confectionary foods having hand-made appearances without relating to the shapes of the food granules.



* NOTICES *

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3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1]A manufacturing installation of greasy confectionery foodstuffs characterized by comprising the following.
Installation conveyance of the mold board for modeling of greasy confectionery foodstuffs is carried out, and they are continuation or a conveyer style which runs intermittently.
It is a foodstuffs grain feeder about a feed mechanism which supplies a modeling confectionery material on this mold board.
A mixer which mixes a greasy material which were formed successively by this foodstuffs grain feeder and melted into a foodstuffs grain.
A ****** filling machine style which levels a modeling confectionery material which consists of transfer pipets of a greasy melted material, and is further supplied from this feed mechanism on a mold board, Arrange a scraper mechanism which eliminates a part for a surplus of a modeling confectionery material laid on said mold board which runs from a mold board and in which a horizontal reciprocation is free, and. A plate recovering mechanism which removes and collects mold boards by which installation conveyance is carried out from modeling confectionery on a conveyer style, and a tap ping mechanism which gives and fabricates vibration on a conveyer style in modeling confectionery which removed this mold board.

[Claim 2]A manufacturing installation of greasy confectionery foodstuffs which consist of a reverse cone breakthrough with a taper surface of an inclined plane where it is the mold board which carried out the multiple arrays of the breakthrough which can be filled up with a modeling confectionery material with which a greasy material which melted into a foodstuffs grain was mixed, and was provided with it, and this breakthrough serves as a byway gradually toward an upper bed edge, or a curved surface, and a perpendicular breakthrough.
[Claim 3]A manufacturing installation of the greasy confectionery foodstuffs according to claim 1 or 2 characterized by comprising the following which consisted of superior lamellas and arranged each breakthrough on the same mind.
An inferior lamella in which said mold board provided a perpendicular breakthrough.
It is a reverse cone breakthrough of a byway from this perpendicular breakthrough.

[Claim 4]A manufacturing installation of the greasy confectionery foodstuffs according to claim 1, 2, or 3 connected with a return carrying path of a mold board which arranges a plate feed mechanism on a conveyer style of said mold board, and are collected from said plate recovering mechanism.
[Claim 5]Said plate supply recovering mechanism provides a grip part which pinches said mold board, enabling free rise and fall, A manufacturing installation of the greasy confectionery foodstuffs according to claim 4 by which arrange at a slider for a run which carries out both-way sliding of this grip part, and connection disposition is carried out at said mold board carrying path and a mold board return carrying path.
[Claim 6]A manufacturing installation of the greasy confectionery foodstuffs [provided with a mold board heating machine style characterized by comprising the following] according to claim

4 or 5.
A tunnel dome which carries in this carrying conveyer by a return carrying path of said mold board consisting of carrying conveyers.
A heater and a fan by which an inner package is carried out to this tunnel dome.

[Translation done.]

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3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application]This invention relates to the manufacturing installation of the greasy confectionery foodstuffs for manufacturing the chocolate foodstuffs which incorporated foodstuffs grains, such as expansion cereals, other biscuits, a cracker, and dry pulp sugars.
[0002]
[Description of the Prior Art]Various foodstuffs grains are conventionally adhered or mixed in greasy confectionery materials, such as chocolate, A clever doubling ******** confectionery foodstuffs ******** crunch chocolate is simultaneously known in the flavor and mouthfeel of a foodstuffs grain, and many foodstuffs grains are utilized for manufacture of this kind of crunch chocolate foodstuffs for a vibrating feeder, a band conveyor, etc. on the surface of greasy unsolidified confectionery, After making it fall continuously and adhering, it cools and solidifies, or the tray put in focusing on the foodstuffs grain is filled up with a greasy confectionery material, and the device to solidify is used abundantly.
[0003]
[Problem(s) to be Solved by the Invention]In this conventional manufacturing installation, are hard to equate mixing and adhesion of a foodstuffs grain, and it becomes a thing of the rate whose dispersion is [that it is large and a work process is also complicated and] feebleminded, And it is difficult to cut down the additive of a foodstuffs grain the neither more nor less continuously, and it serves as an appearance defect, or, Became regulation block like shape, and finish of the hand structure style of the natural state was not completed, and it could not be satisfied with a mold, the inferior goods of the product occurred frequently, and also there were problems, like the process to which a foodstuffs grain is made to adhere corresponding to the shape of the piece of foodstuffs serves as a complicated and feebleminded rate, and productivity is bad and serves as manufacturing-cost quantity. This invention tends to eliminate the fault of these former and can be used as the greasiness confectionery containing a foodstuffs grain regardless of the shape of a foodstuffs grain shape considering it as greasy confectionery, It is the style of hand structure, and it is remarkably good, and can equate, commodity value is raised, and the appearance of a product is also aimed at providing the manufacturing installation of the greasy confectionery foodstuffs which can also improve productivity sharply.
[0004]
[Means for Solving the Problem]This invention carries out installation conveyance and a mold board for modeling of greasy confectionery foodstuffs Continuation or a conveyer style it runs intermittently, A feed mechanism which supplies a modeling confectionery material on this mold board A foodstuffs grain feeder, A mixer which mixes a greasy material which were formed successively by this foodstuffs grain feeder and melted into a foodstuffs grain, A ****** filling machine style which levels a modeling confectionery material which consists of transfer pipets of a greasy melted material, and is further supplied from this feed mechanism on a mold board, Arrange a scraper mechanism which eliminates a part for a surplus of a modeling confectionery material laid on said mold board which runs from a mold board and in which a horizontal reciprocation is free, and. It has a plate recovering mechanism which removes and collects mold

boards by which installation conveyance is carried out from modeling confectionery on a conveyer style, and a tap ping mechanism which gives and fabricates vibration on a conveyer style in modeling confectionery which removed this mold board.

[0005]

[Function]Although a mold board is carried in by a plate feed mechanism and conveyed directly under the feed mechanism of a modeling confectionery material at conveyer guard, A foodstuffs grain and a greasy melted material are thrown into a foodstuffs grain feed mechanism from a foodstuffs grain feeder and greasy material transfer pipet, carry out mixed stirring by a mixer, and it is considered as a modeling confectionery material, and installation supply is carried out on a mold board. It is ****** to a mold part at a ****** filling machine style, opening and leveling a modeling confectionery material with the smoothing mechanism which reciprocates on a mold board running a board and holding the MORIDO board which laid the modeling confectionery material next. And this mold board is located under the scraper which it is further transported and carries out a horizontal reciprocation at conveyer guard, With a scraper the modeling confectionery material upper surface laid on the mold board Scraping, After eliminating and finishing a part for the surplus, a mold board is taken out by a plate recovering mechanism, fabricating much greasy confectionery foodstuffs, transporting them on a conveyer style, giving vibration further, to greasy confectionery foodstuffs by a tap ping mechanism, while it is [before solidification] soft, and accustoming appearance shape — a natural state — especially, it can finish in the style of hand structure and can manufacture with an efficient gestalt with good quality.

[0006]

[Example]When the example of this invention is described with reference to drawings, as shown in drawing 1 thru/or drawing 4, carry out installation conveyance and the mold board 1 for modeling of greasy confectionery Continuation or the conveyer style 2 of a conveyor it runs intermittently, The feed mechanism which supplies a modeling confectionery material on this mold board 1 The foodstuffs grain feeders 3, such as a puff, The mixer 4 which mixes greasy materials, such as chocolate which were formed successively by this foodstuffs grain feeder 3 and melted into the foodstuffs grain, The ****** filling machine style 7 provided with the smoothing mechanism 6 for the modeling confectionery material which consists of the transfer pipets 5 of a greasy melted material, and is further supplied from this feed mechanism, Arrange the scraper mechanism 8 which eliminates a part for the surplus of the modeling confectionery material laid on said mold board which runs from the mold board 1 and in which a horizontal reciprocation is free, and. It has the plate recovering mechanism 9 which removes and collects the mold boards 1 by which installation conveyance is carried out from modeling confectionery on the conveyer style 2, and the tappet tool BINGU mechanism 22 which gives and fabricates vibration on the conveyer style 1 in the modeling confectionery which removed this mold board 1, and the manufacturing installation of greasy confectionery foodstuffs is constituted.

[0007]Although many breakthroughs 23 for modeling confectionery material insertion are arranged and this breakthrough 23 has the taper surface 24 of the inclined plane which serves as a byway gradually toward an upper bed edge, or a curved surface as said mold board 1, The inferior lamella 29 which has a size and the depth if the cup tray 25 is inserted, for example, formed the with the diameters 30-35phi and a depth of 15 mm perpendicular breakthrough 26, From this perpendicular breakthrough 26, it consists of the superior lamella 28 which formed the byway 24-26phi, for example, diameters, and the 5-mm-deep reverse cone breakthrough 27, each breakthroughs 26 and 27 are arranged on the same mind, and it is considered as the breakthrough 23.

[0008]In this case, the material which could make said reverse cone breakthrough 27 the breakthrough with a spherical curved surface, and rose from the cup tray 25 is considered so that it may become heap shape. Said superior lamella 28 and the inferior lamella 29 can be considered as the connection composition which can be freely opened and closed [disengageable or] with the depth size of 1:3, or can also be used as the mold board 1 of integral construction. When using an underlay sheet, insert the cup tray 25 in the breakthrough 26, but. what is necessary is just to carry out a mold directly by the breakthrough 26 on the

conveyor belt for conveyance, when not using the cup tray 25 -- this breakthrough 26 -- not only a perpendicular breakthrough but a gimlet -- the inferior lamella 29 which provided the breakthrough of ** or other shape can be used. When using said cup tray 25, After removing the superior lamella 28 from the inferior lamella 29, inserting the cup tray 25 in the perpendicular breakthrough 26 of the inferior lamella 29 and setting it, After carrying out polymerization adherence of the superior lamella 28, it is good to carry in to the plate feed mechanism 90, or to insert, set and turn the cup tray 25 over from the bottom side of the inferior lamella 29 to the perpendicular breakthrough 26, and to carry in to the plate feed mechanism 90.

[0009]As said foodstuffs grain feeder 3, like drawing 5 thru/or drawing 8, puff rice, a KONFU lake, The screw housing 31 provided with the hopper 30 which can supply foodstuffs grains, such as confection children, such as which pregelatinization cereals, nuts, and a butter scutch, and dry pulp, It consists of the screw 32 provided in this housing 31 enabling free rotation, and drives by the motor 34, and free passage disposition of the outlet 33 formed in the housing 31 has been carried out at said mixer 4.

[0010]This mixer 4 being provided with the shaft 11 with the variable speed motor 12 in the open casing 10 like drawing 9, enabling free rotation, and more than one protruding the stirring wings 13 on this shaft 11, and stirring a fats-and-oils confectionery material. Are constituted so that it may transport to the end side, it may let out from the derivation port 14 and it can incorporate and supply on the mold board 1 conveyed, but. the chocolate pump 16 which could equip this derivation port 14 with the shutter in which opening-and-closing adjustment is possible, and was connected to the jacket type chocolate tank 15 -- piping -- the transfer pipet 5 -- an end -- ****** -- better -- ** -- ** -- ** -- the screw housing 31 of said foodstuffs grain feeder 3 which carries out an opening is arranged in the neighborhood.

[0011]The smoothing mechanism 4 which the running direction of said mold board 1 and said ****** filling machine style 7 cross at right angles like drawing 10 thru/or drawing 12, and reciprocates and which levels and has a board, It is arranged by the upper surface of the conveyer style 2 which connects the **** shut 72 provided with the stirring wing piece 71 which provided the circumference of the mold board 1 in the jacket wall 70 which **** on an abbreviated KO character and cooling water flows through inside, and this jacket wall 70 enabling free rotation to the variable speed motor 73, is provided with it, and runs the shut. Piping circulation connection of this jacket wall 70 has been carried out via the pump 19 at the coolant tank 17 with which the heater 18 has the entrance 74 and the exit 75 of cooling water, and this coolant tank 17 and the pump 19 are connected also to said chocolate tank 15 as the circulatory system.

[0012]The jacket wall 70 is used as the frame wall of the approximately U type which has an enclosure in both sides, Arrange so that the mold board 1 may pass directly under the, and it prepares for the slider 79 which equipped the guide lever 78 with the retaining piece 77 rocked by the motor 76 to the wall opposite-**(ed) by the running direction of the mold board 1, It can be [accurate] made to carry out in the piece 80 of a guide cam in both sides-izing of the support of the mold board 1.

[0013]Although level, the guide 40 is equipped with a board as said smoothing mechanism 4, enabling a free level round trip, it drives by rotation of the screw shaft 41 and it enables it to have run on the mold board 1, it can replace with this screw shaft 41, and other conveyance drive mechanisms can also be used. Said conveyer style 2 is connected to the variable speed motor 21 via the driving wheel 20 using a net conveyor or a chain conveyor, is arranged, enabling a free run, and enables it to have conveyed or suspended the mold board 1 at each process.

[0014]Said scraper mechanism 8 forms slidably the slider 82 which reciprocates in the cylinder 81 in the running direction of the mold board 1 like drawing 13 thru/or the example of drawing 16 at the guide 83, The scraper plate 84 is pivoted in this slider 82 rockable, and the no contact control switches 85 and 85 for the driving operation of said cylinder are arranged in the inversion position of a slider, and it is constituted so that it may move reciprocately. In this case, support the scraper plate 84 by the pivot 86, and it connects this pivot 86 with the cylinder 88 with the lever 87, The press run of the tip part of the scraper plate 84 is carried out by the drive of this cylinder 88 at the upper surface of the mold board 1, a part for the surplus of a modeling

confectionery material is made into a scraping machined surface, a part for the tip of the scraper plate 84 is raised at the time of a return, and it prepares for the next processing. As for a part for a scraping surplus, it is convenient that the doctor knife 59 also recovers the material which were collected by the plug-type saucer 89 with which a part for a frame end is equipped, and adhered on the conveyor on the scraping saucer 89.

[0015]As shown in drawing 1 and drawing 2, the plate feed mechanism 90 is arranged on the conveyer style 2 of said mold board 1, The return carrying path 91 of the mold board 1 collected from said plate recovering mechanism 9 is connected with, And said plate recovering mechanism 9 and the plate feed mechanism 90 form the grip part 92 which pinches said mold board 1, enabling free rise and fall, It arranges at the slider 93 for a run which carries out both-way sliding of this grip part 92, connection disposition is carried out at said mold body carrying path 2 and the mold board return carrying path 91, and the pusher 94 is attached to the plate feed mechanism 90.

[0016]The tunnel dome 95 which the return carrying path 91 of said mold board 1 consists of carrying conveyers, is used with the plate feed mechanism 90 only when full automatic, and carries in this carrying conveyer, Although it has a mold board heating machine style which consists of the heater 96 by which an inner package is carried out to this tunnel dome 55, and the fan 97 and can be made to perform cleaning of the mold board 1, in a semi-automatic case, it may omit with a plate feed mechanism.

[0017]That is, like drawing 17 and drawing 18, it had roll kneader 98 group which carries out maintenance conveyance of the mold board 1 which it lets out by conveyor in the return carrying path 91, and it is equipped with the tunnel dome 95 with the heating method which warms this mold board 1. As a heating method of this tunnel dome 95, It has the hood 99 which moves warm air idly on the mold board 1 which consists of the heater 96 and the fan 97 which ventilates this heater 96 group, and is passed, When it receives in said roll kneader 98 group, it is passed and it moves, the sensors 52, such as a phototube, detect the passage, Drive the fan 97, spray the warm air which passed the heater 96 on the mold board 1, and warm it, and during a run within this tunnel dome 95, by vertical rotation roll 98 group, pinch the mold board 1 and maintenance conveyance is carried out, It is constituted so that it may send out under the plate feed mechanism 90 with the quick delivery roll 51 of speed. And lay the warmed mold board 1, and it is made to move to continuation or the conveyer style of a conveyor it runs intermittently, and is considered as the feed mechanism which supplies a modeling confectionery material on this mold board 1.

[0018]From the plate recovering mechanism 9, the return carrying path 91 of the mold board 1 moves, in response to the fact that the mold board 1, and it is carried in to a tunnel dome. Sensors, such as a phototube, detect this passage, a fan is driven, and the warm air which passed the heater is sprayed on a mold board, and is warmed. It is good during a run within this tunnel dome to pinch a mold board, to carry out maintenance conveyance by a roll kneader group, and to send out to a conveyer style with the quick delivery roll of speed. Subsequently, although the mold board warmed at this conveyer guard is conveyed directly under the feed mechanism of a modeling confectionery material, Throw a foodstuffs grain and a greasy melted material into a foodstuffs grain feed mechanism from a foodstuffs grain feeder and greasy material transfer pipet, carry out mixed stirring by a mixer, and consider it as a modeling confectionery material, and. It is made to be made of a series of work to put into the adjusting box of this modeling confectionery material, to adjust softness and the amount of supply, and to supply on a mold board.

[0019]Vibration is given to a conveyor using a vibrator mechanism with a motor, appearance finish of the modeling confectionery on a conveyor is changed in the style of hand structure, and it enables it to have transported modeling confectionery to the carrying out conveyer 61 containing the cooling conveyor 60 in said tap ping mechanism 22. In the inside 62, 63, and 64 of a figure, as for an axle-pin rake and 67, a recovery saucer and 65 are [a fixed type landing gear and 68] steps a pedestal and 66.

[0020]

[Effect of the Invention]In this invention, the feed mechanism which supplies a modeling

confectionery material on this mold board conveyed A foodstuffs grain feeder, The mixer which mixes a greasy material which were formed successively by this foodstuffs grain feeder and melted into the foodstuffs grain, The ****** filling machine style which levels the modeling confectionery material which consists of transfer pipets of a greasy melted material, and is further supplied from this feed mechanism on a mold board, Arrange the scraper mechanism which eliminates a part for the surplus of the modeling confectionery material laid on said mold board which runs from a mold board and in which a horizontal reciprocation is free, and. It had the plate recovering mechanism which removes and collects the mold boards by which installation conveyance is carried out from modeling confectionery on a conveyer style, and the tap ping mechanism which gives and fabricates vibration on a conveyer style in the modeling confectionery which removed this mold board.
Therefore, the thing considered as various greasiness confectionery foodstuffs containing a foodstuffs grain regardless of the shape of a foodstuffs grain, Appearance finish is good and it can do easily in the style of hand structure, ****** work is also accurate, and also a mold is also good, a moldability and the mixing ratio are also equivalent, it is useful for upgrading, and productivity is well improved sharply as confectionery foodstuffs which can enjoy mouthfeel with flavor persistently [the taste].

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a whole top view showing the example of this invention.
[Drawing 2]It is a side view of the example of drawing 1.
[Drawing 3]It is a perspective view of the mold board used in the example of drawing 1.
[Drawing 4]It is an enlarged vertical longitudinal sectional view in the A-A line of drawing 3.
[Drawing 5]It is a top view of the modeling part of the confectionery foodstuffs of drawing 1.
[Drawing 6]It is a side view of the example of drawing 5.
[Drawing 7]It is a front view of the example of drawing 5.
[Drawing 8]It is a side view of a foodstuffs grain feed mechanism.
[Drawing 9]It is a cut plane figure of an open mixer.
[Drawing 10]It is a partial cut plane figure of a ****** filling machine style.
[Drawing 11]It is a partial cutting side view of the example of drawing 8.
[Drawing 12]It is a front view of the example of drawing 8.
[Drawing 13]It is a top view of a scraper mechanism.
[Drawing 14]It is drawing of longitudinal section in the B-B line of drawing 13.
[Drawing 15]It is a front view in the C-C line of drawing 14.
[Drawing 16]They are some [in the D-D line of drawing 15] enlarged vertical longitudinal sectional views.
[Drawing 17]They are some enlarged plan views of a return carrying path.
[Drawing 18]It is a side view of the example of drawing 17.
[Description of Notations]
1 Mold board
2 Conveyer style
3 Foodstuffs grain feeder
4 Mixer
5 Fats-and-oils material transfer pipet
6 Smoothing mechanism
7 ****** filling machine style
8 Scraper mechanism
9 Plate recovering mechanism
10 Open casing
11 Shaft
12 Motor
13 Stirring wings
15 Chocolate tank
16 Chocolate pump
17 Coolant tank
18 Heater
19 Pump
20 Driving wheel
21 Motor

22 Tap ping mechanism
23 Breakthrough
24 Taper surface
25 Cup tray
26 Perpendicular breakthrough
27 Reverse cone breakthrough
28 Inferior lamella
29 Superior lamella
30 Hopper
32 Screw
70 Jacket wall
71 Stirring wings
81 Cylinder
82 Slider
90 Plate feed mechanism
91 Return carrying path
95 Tunnel dome
96 Heater
97 Fan

[Translation done.]

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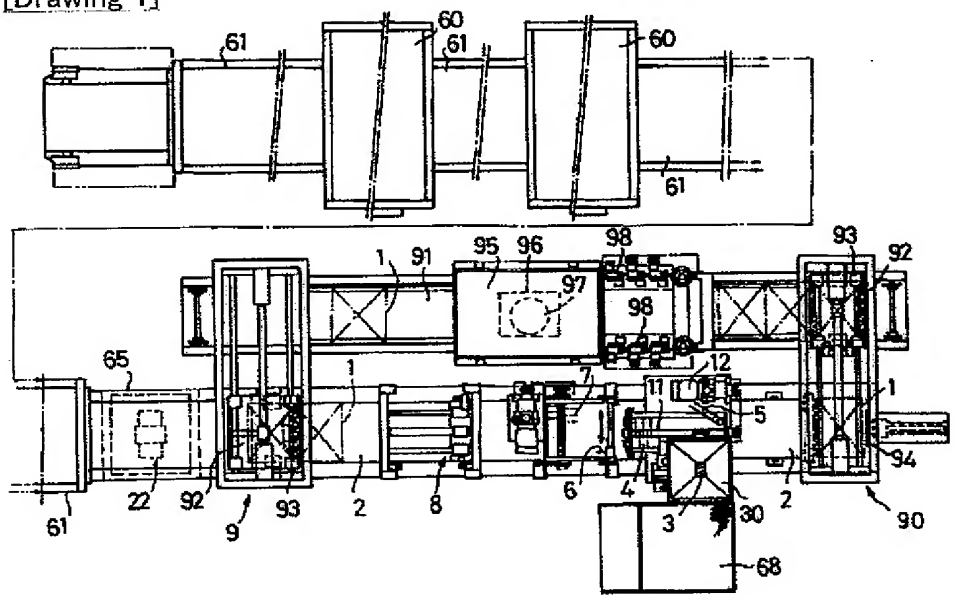
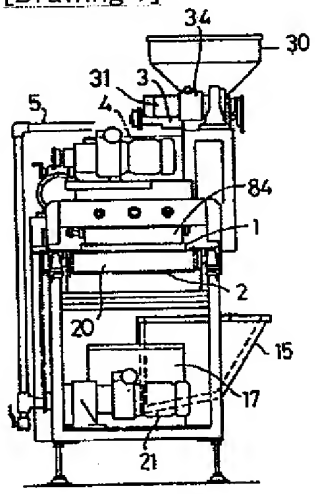
DRAWINGS

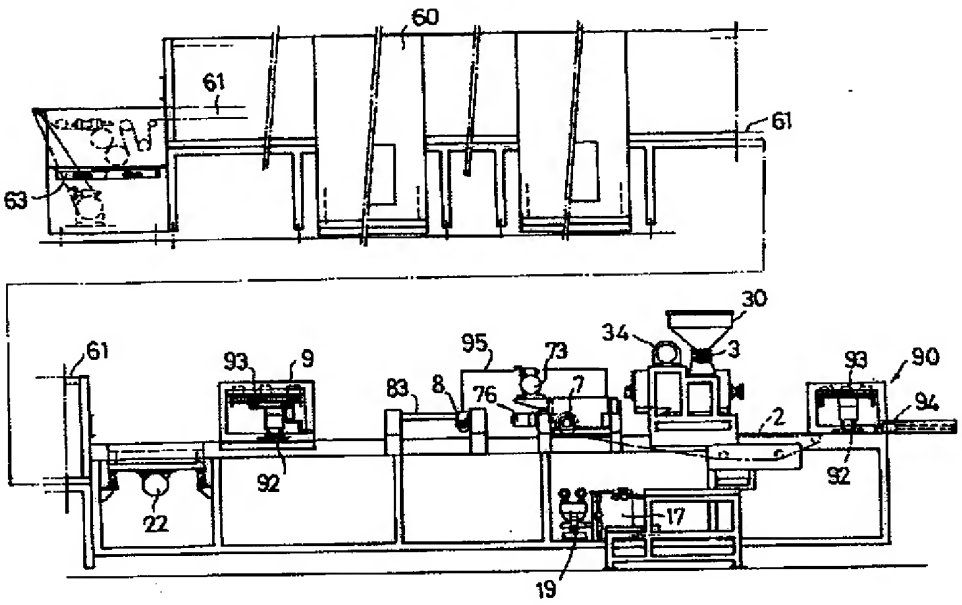
[Drawing 1]



[Drawing 7]



[Drawing 2]



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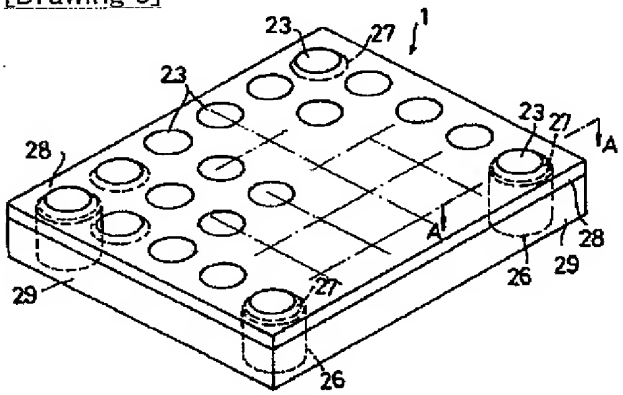
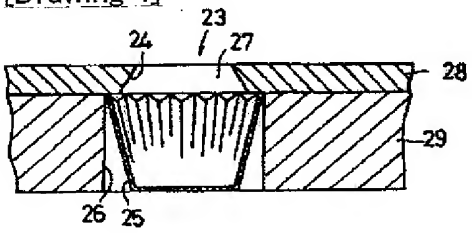
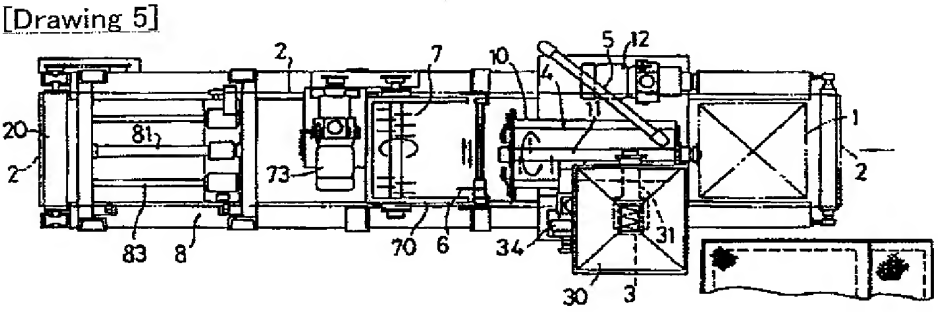


[Drawing 4]



[Drawing 5]



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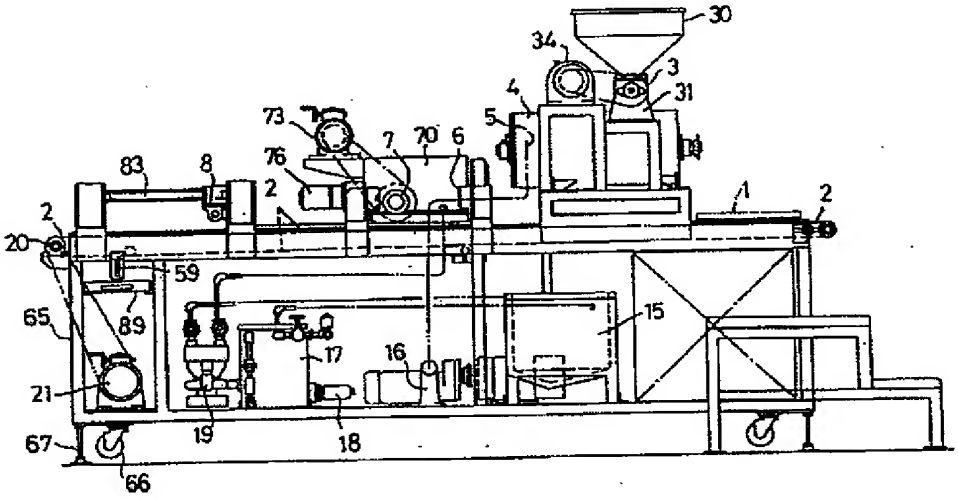
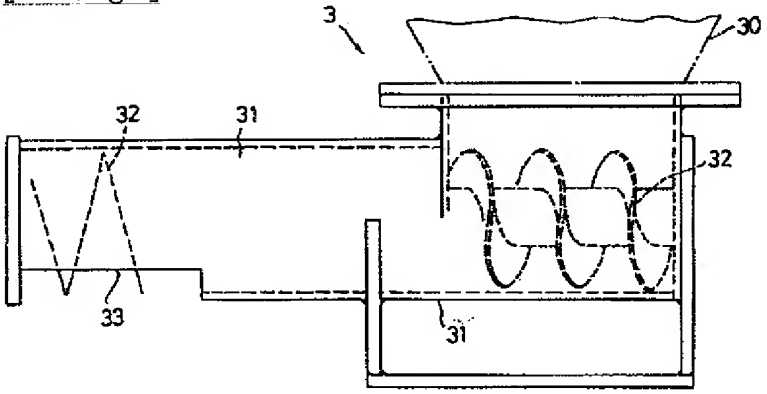
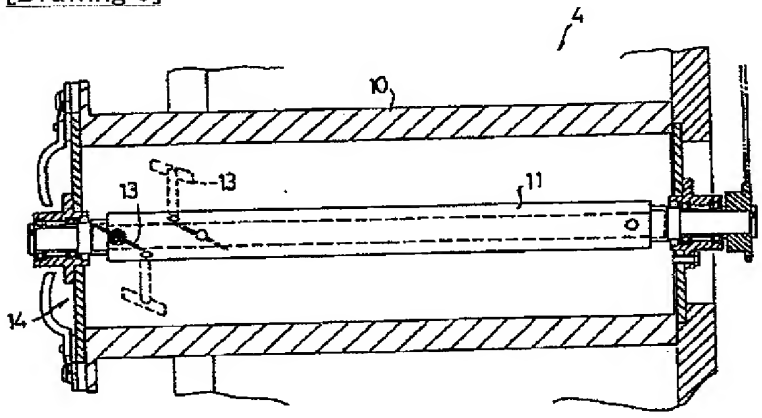


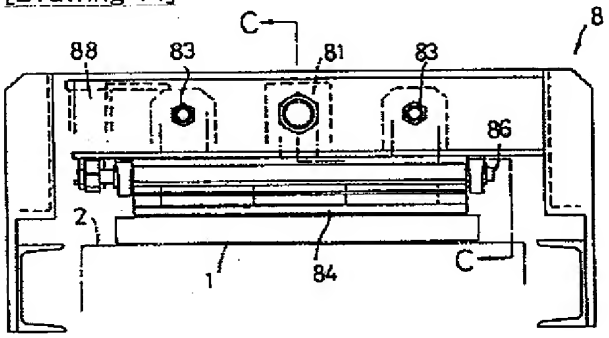
[Drawing 8]



[Drawing 9]



[Drawing 14]



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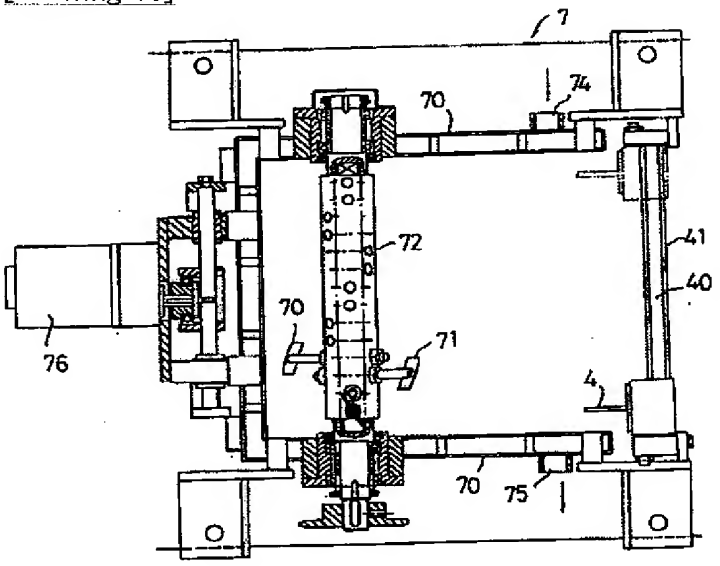

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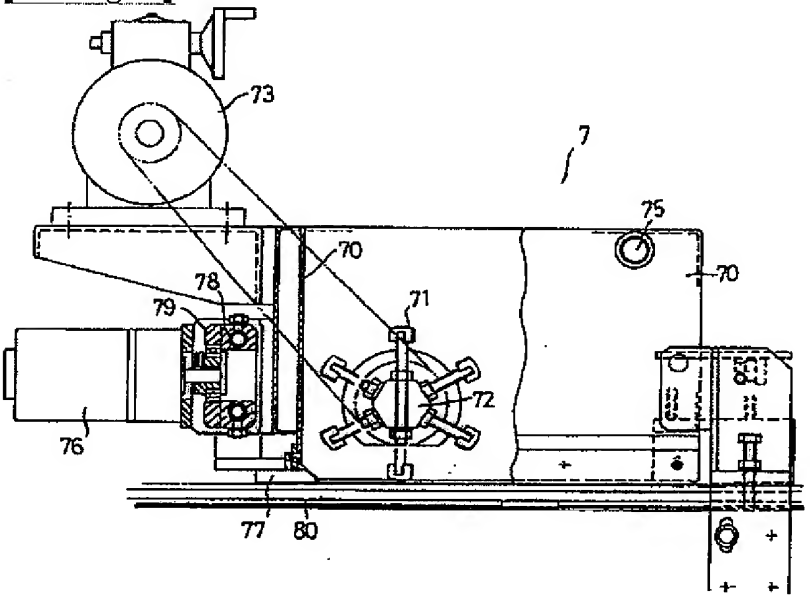
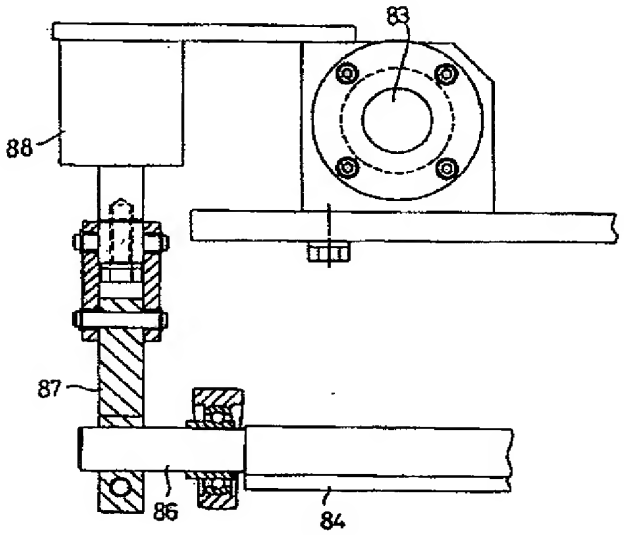


[Drawing 16]



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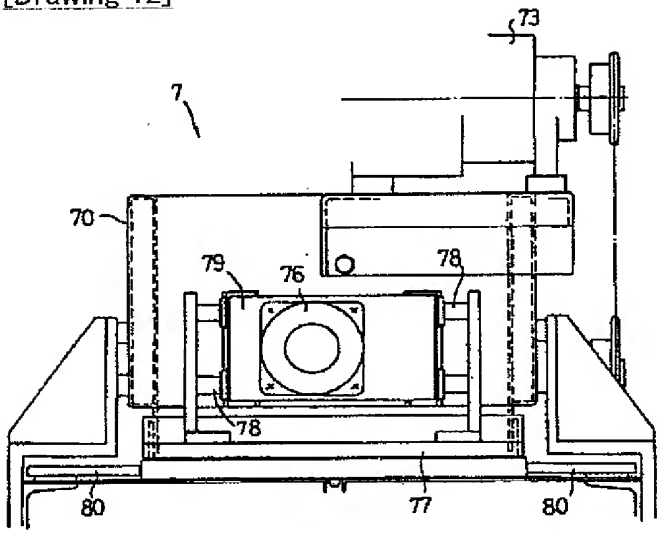
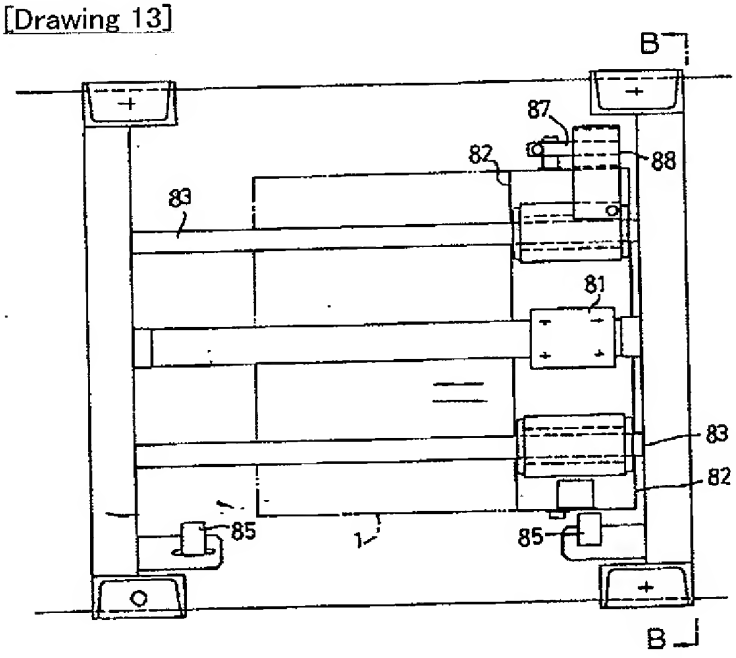
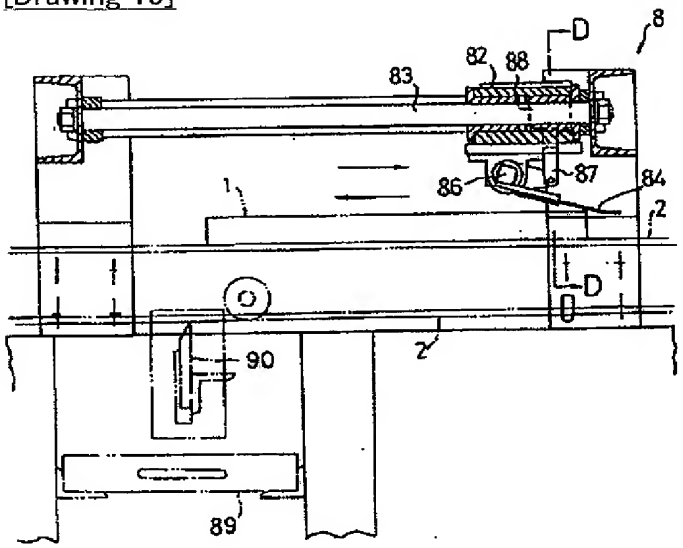


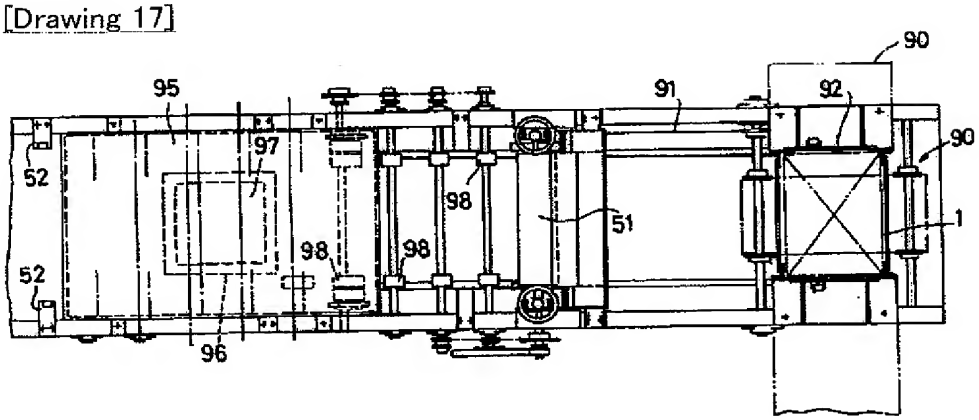
[Drawing 13]



[Drawing 15]



[Drawing 17]



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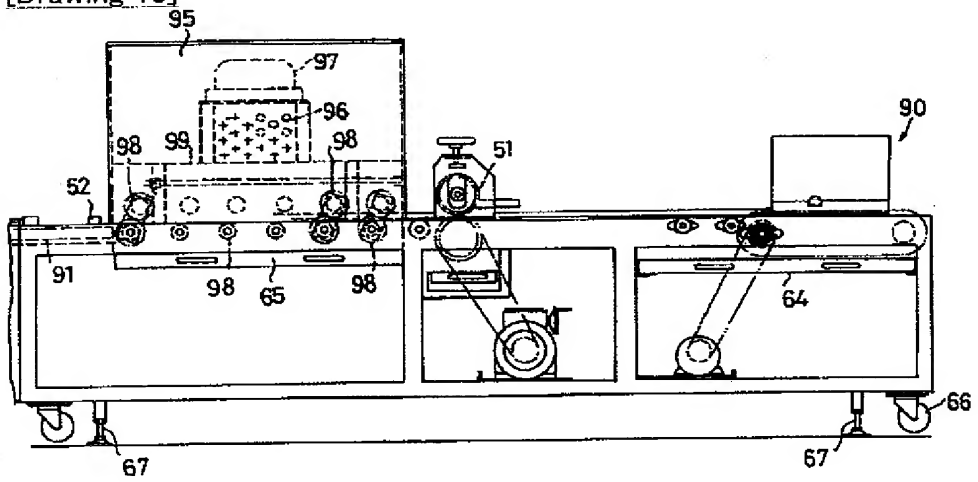

[Translation done.]